IN THE CLAIMS

1. (original): A composition comprising:

(a) a major dye component which is a mixture of phthalocyanine dyes of Formula (1) and salts thereof:

$$MPc \underbrace{ \left(SO_3H \right)_x}_{ \left(SO_2NR^1R^2 \right)_y}$$

$$\underbrace{ \left(SO_2NR^3R^4 \right)_z}_{ \left(SO_2NR^3R^4 \right)_z}$$

Formula (1)

wherein:

M is Cu or Ni;

Pc represents a phthalocyanine nucleus of formula;

 $R^1\,$ and $R^2\,$ independently are H or optionally substituted $C_{1\text{--}4}alkyl;$

R³ is H or optionally substituted hydrocarbyl; and

R⁴ is optionally substituted hydrocarbyl; or

R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted aliphatic or aromatic ring system;

x is 0.1 to 3.8;

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4; and

the substituents, represented by x, y and z, are attached only to a β -position on the phthalocyanine ring; and

- (b) a liquid medium which comprises water and an organic solvent or an organic solvent free from water.
- 2. (original): A composition according to claim 1 comprising:
- (a) a major dye component which is a mixture of phthalocyanine dyes of Formula (1) and salts thereof:

$$\mathsf{MPc} \underbrace{\hspace{1cm} \big(\mathsf{SO_3H}\big)_{\mathsf{x}}}_{\big(\mathsf{SO_2NR}^{\mathsf{3}}\mathsf{R}^{\mathsf{4}}\big)_{\mathsf{y}}}$$

Formula (1)

wherein:

M is Cu or Ni;

Pc represents a phthalocyanine nucleus of formula;

$$\beta \xrightarrow{\beta} \alpha \xrightarrow{N \xrightarrow{\alpha} N} \beta \xrightarrow{\alpha} \alpha$$

$$N \xrightarrow{N \xrightarrow{\alpha} N} N \xrightarrow{\alpha} \alpha$$

$$\beta \xrightarrow{\alpha} \alpha \xrightarrow{\alpha} \beta$$

$$\alpha \xrightarrow{N \xrightarrow{\alpha} N} N \xrightarrow{\alpha} \alpha$$

R¹ and R² independently are H or optionally substituted C₁₋₄alkyl;

R³ is H or optionally substituted hydrocarbyl; and

R⁴ is optionally substituted hydrocarbyl; or

R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted aliphatic or aromatic ring system;

x is 0.1 to 3.8;

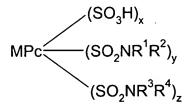
y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4; and

the substituents, represented by x, y and z, are attached only to a $\[mathbb{B}$ -position on the phthalocyanine ring and the mixture of phthalocyanine dyes of Formula (1) are obtainable by a process which comprises cyclisation of appropriate $\[mathbb{B}$ -sulfo substituted phthalic acid, phthalonitrile, iminoisoindoline, phthalic anhydride, phthalimide or phthalamide in the presence of a suitable nitrogen source (if required), a copper or nickel salt and a base followed by chlorination and then amination/amidation; and

- (b) a liquid medium which comprises water and an organic solvent or an organic solvent free from water.
- 3. (original): A composition according to either claim 1 or claim 2 comprising:
- (a) a major dye component which is a mixture of phthalocyanine dyes of Formula (1) and salts thereof:



Formula (1)

wherein:

M is Cu or Ni;

Pc represents a phthalocyanine nucleus of formula;

$$\beta \xrightarrow{\beta} \alpha \xrightarrow{N} N \xrightarrow{\alpha} \beta \xrightarrow{\beta} \beta$$

$$N \xrightarrow{N} N \xrightarrow{N} N \xrightarrow{\alpha} \beta$$

R¹ and R² independently are H or optionally substituted C₁₋₄alkyl;

R³ is H or optionally substituted hydrocarbyl; and

R⁴ is optionally substituted hydrocarbyl; or

R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted aliphatic or aromatic ring system;

x is 0.1 to 3.8;

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4; and

the substituents, represented by x, y and z, are attached only to a $\mbox{\ensuremath{\mathfrak{G}}}$ -position on the phthalocyanine ring and the mixture of phthalocyanine dyes of Formula (1) are obtainable by cyclisation of 4-sulfo-phthalic acid in the presence of a nitrogen source a copper or nickel salt and a base to give phthalocyanine \mathbb{S}-tetrasulfonic acid which is then chlorinated and the sulfonyl chloride groups so formed are reacted with compounds of formula HNR 1 R 2 and HNR 3 R 4 wherein R 1 , R 2 , R 3 and R 4 are as hereinbefore defined; and

(b) a liquid medium which comprises water and an organic solvent or an organic solvent free from water.

5

- 4. (original): A composition according to claim 1 comprising:
- (a) a mixture of phthalocyanine dyes of Formula (1) and salts thereof:

$$MPc \underbrace{\left(SO_{3}H\right)_{x}}_{\left(SO_{2}NR^{1}R^{2}\right)_{y}}$$

$$\underbrace{\left(SO_{2}NR^{3}R^{4}\right)_{z}}_{\left(SO_{2}NR^{3}R^{4}\right)_{z}}$$

Formula (1)

wherein:

M is Cu or Ni;

Pc represents a phthalocyanine nucleus;

R¹ and R² independently are H or optionally substituted C₁₋₄alkyl;

R³ is H or methyl;

R⁴ is optionally substituted hydrocarbyl; or

R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted aliphatic or aromatic ring system;

x is 0.1 to 3.8;

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4; and

the substituents, represented by x, y and z, are attached only to a ß-position on the phthalocyanine ring and the mixture of phthalocyanine dyes of Formula (1) are obtainable by a process which comprises cyclisation of appropriate ß substituted phthalic acid, phthalonitrile, iminoisoindoline, phthalic anhydride, phthalimide or phthalamide in the presence of a suitable copper or nickel salt followed by chlorination and then amination/amidation; and (b) a medium which comprises water and an organic solvent or an organic solvent free from water.

- 5. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 wherein M is Cu.
- 6. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 wherein x has a value of 0.5 to 3.5, y has a value of 0.5 to 3.5 and z has a value of 0.5 to 3.5.

- 7. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 wherein R¹, R² and R³ are independently H or methyl and R⁴ is optionally substituted aryl.
- 8. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 wherein R⁴ is phenyl bearing at least one sulfo, carboxy or phosphato substituent and having further optional substituents.
- 9. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 wherein R⁴ is phenyl bearing a single sulfo substituent.
- 10. (currently amended): A composition according to any one of claims 1 to 6 claim 1 or claim 2 wherein R¹ and R² independently are H or methyl and R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted 3 to 8 membered aliphatic or aromatic ring.
- 11. (currently amended): A composition according to any one of claims 1 to 6 claim 1 or claim 2 wherein R^1 and R^2 independently are H or methyl, R^3 is H or optionally substituted C_{1-8} alkyl and R^4 is optionally substituted C_{1-8} alkyl.
- 12. (original): A composition according to claim 11 wherein R^1 and R^2 are H, R^3 is H or C_{1-4} alkyl bearing at least one acid substituent selected from the group consisting of $-SO_3H$, -COOH or $-PO_3H_2$ and R^4 is C_{1-4} alkyl bearing at least one acid substituent selected from the group consisting of $-SO_3H$, -COOH or $-PO_3H_2$.
- 13. (currently amended): A composition according to any one of claims 1 to 11 claim 1 or claim 2 wherein R¹ and R² are H.
- 14. (currently amended): A composition according to claim 11 or claim 12 wherein R^1 , R^2 and R^3 are H, R^4 is $-CH_2CH_2SO_3H$ and y is less than 1.
- 15. (original): A composition according to claim 11 wherein R^1 is H, R^2 is CH_3 , R^3 is H and R^4 is $-CH_2CH_2SO_3H$.

- 16. (original): A composition according to claim 11 wherein R¹ and R² are CH₃, R³ is H and R⁴ is −CH₂CH₂SO₃H.
- 17. (currently amended): A composition according any one of the preceding claims to claim 1 or claim 2 wherein at least 70% by weight of the total amount of phthalocyanine dye is of Formula (1).
- 18. (original): A composition according to claim 17 wherein at least 90% by weight of the total amount of phthalocyanine dye is of Formula (1).
- 19. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 wherein the dyes of Formula(1) are free from fibre reactive groups.
- 20. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 which comprises:
 - (a) from 0.1 to 20 parts of compounds of Formula (1); and
- (b) from 80 to 99.9 parts of a liquid medium; wherein all parts are by weight and the number of parts of (a)+(b)=100.
- 21. (original): A composition according to claim 20 which comprises:
 - (a) from 0.5 to 15 parts of compounds of Formula (1); and
 - (b) from 85 to 99.5 parts of a liquid medium;

wherein all parts are by weight and the number of parts of (a)+(b)=100.

- 22. (original): A composition according to claim 20 which comprises:
 - (a) from 1 to 5 parts of compounds of Formula (1); and
 - (b) from 95 to 99 parts of a liquid medium;

wherein all parts are by weight and the number of parts of (a)+(b)=100.

- 23. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 wherein the liquid media may contain additional components conventionally used in ink-jet printing inks.
- 24. (currently amended): A composition according to any one of the preceding claims claim 1 or claim 2 which is an ink suitable for use in an ink-jet printer.

25. (original): A mixture of dyes of Formula (4) and salts thereof:

$$MPc \underbrace{ \left(SO_3H \right)_x}_{ \left(SO_2NR^3R^4 \right)_z}$$

Formula (4)

wherein:

M is Cu or Ni;

Pc represents a phthalocyanine nucleus of formula;

$$\beta \xrightarrow{\beta} \alpha \xrightarrow{N} N \xrightarrow{\alpha} \beta \xrightarrow{\beta} \beta$$

$$N \xrightarrow{N} N \xrightarrow{N} N \xrightarrow{\alpha} \beta$$

$$\beta \xrightarrow{\beta} \alpha \xrightarrow{N} N \xrightarrow{\alpha} \beta$$

R¹ and R² independently are H or optionally substituted C₁₋₄alkyl;

R³ is H or optionally substituted C₁₋₈alkyl;

R⁴ is optionally substituted C₁₋₈alkyl or phenyl bearing at least one sulfo, carboxy or phosphato substituent and having further optional substituents other than amino or substituted amino; or

R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted 5- or 6-membered aliphatic or aromatic ring;

x is 0.1 to 3.8;

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4; and the substituents, represented by x, y and z, are attached only to a β -position on the phthalocyanine ring.

26. (original): A mixture of dyes according to claim 25 of Formula (4) and salts thereof:

$$MPc \underbrace{ \left(SO_{2}H \right)_{x}}_{ \left(SO_{2}NR^{3}R^{4} \right)_{z}}$$

Formula (4)

wherein:

M is Cu or Ni;

Pc represents a phthalocyanine nucleus of formula;

 R^1 and R^2 independently are H or optionally substituted C_{1-4} alkyl;

R³ is H or optionally substituted C₁₋₈alkyl;

 R^4 is optionally substituted C_{1-8} alkyl or phenyl bearing at least one sulfo, carboxy or phosphato substituent and having further optional substituents other than amino or substituted amino; or

R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted 5- or 6-membered aliphatic or aromatic ring;

x is 0.1 to 3.8;

y is 0.1 to 3.8;

z is 0.1 to 3.8;

the sum of (x+y+z) is 4; and the substituents, represented by x, y and z, are attached only to a β -position on the phthalocyanine ring and the mixture of phthalocyanine dyes of Formula (1) are prepared by a process which comprises cyclisation of appropriate β -sulfo substituted phthalic acid, phthalonitrile, iminoisoindoline, phthalic anhydride, phthalimide or

phthalamide in the presence of a suitable nitrogen source (if required), a copper or nickel salt and a base followed by chlorination and then amination/amidation.

27. (original): A mixture of dyes according to either claim 25 or claim 26 of Formula (2) and salts thereof:

$$MPc \underbrace{ \left(SO_{3}H \right)_{x}}_{ \left(SO_{2}NR^{1}R^{2} \right)_{y}}$$

$$\underbrace{ \left(SO_{2}NR^{3}R^{4} \right)_{z}}_{ \left(SO_{2}NR^{3}R^{4} \right)_{z}}$$

Formula (2)

wherein:

M is Cu;

Pc represents a phthalocyanine nucleus of formula;

R¹, R² and R³ independently are H or methyl;

R⁴ is phenyl bearing at least one sulfo, carboxy or phosphato substituent and having further optional substituents other than amino or substituted amino;

x is 0.5 to 3.5;

y is 0.5 to 3.5;

z is 0.5 to 3.5;

the sum of (x+y+z) is 4; and the substituents, represented by x, y and z, are attached only to a β -position on the phthalocyanine ring and the mixture of phthalocyanine dyes of Formula (1) are prepared by a process which comprises cyclisation of appropriate β -sulfo substituted phthalic acid, phthalonitrile, iminoisoindoline, phthalic anhydride, phthalimide or phthalamide in the

presence of a suitable nitrogen source (if required), a copper or nickel salt and a base followed by chlorination and then amination/amidation.

28. (original): A mixture of dyes according to either claim 25 or claim 26 of Formula (3) and salts thereof:

$$MPc \underbrace{ \left(SO_3 H \right)_x}_{ \left(SO_2 NR^1 R^2 \right)_y}$$

$$\left(SO_2 NR^3 R^4 \right)_z$$

Formula (3)

wherein:

M is Cu;

Pc represents a phthalocyanine nucleus of formula;

$$\beta \xrightarrow{\beta} \alpha \xrightarrow{\alpha} N \xrightarrow{\alpha} \beta \xrightarrow{\beta} \alpha$$

$$N \xrightarrow{N} N \xrightarrow{N} N \xrightarrow{\alpha} \beta$$

$$\beta \xrightarrow{\alpha} N \xrightarrow{\alpha} N \xrightarrow{\alpha} \beta$$

R¹ and R² independently are H or methyl;

R³ and R⁴ independently are C₁₋₄alkyl bearing at least one acid substituent, selected from the group consisting of –SO₃H, -COOH or –PO₃H₂;

x is 0.5 to 3.5;

y is 0.5 to 3.5;

z is 0.5 to 3.5;

the sum of (x+y+z) is 4; and the substituents, represented by x, y and z, are attached only to a β -position on the phthalocyanine ring and the mixture of phthalocyanine dyes of Formula (1) are prepared by a process which comprises cyclisation of appropriate β -sulfo substituted phthalic acid, phthalonitrile, iminoisoindoline, phthalic anhydride, phthalimide or

phthalamide in the presence of a suitable nitrogen source (if required), a copper or nickel salt and a base followed by chlorination and then amination/amidation.

- 29. (currently amended): A mixture of dyes according to any one of claims 25 to 28 claim 25 or claim 26 wherein R¹ and R² are H.
- 30. (original): A mixture of dyes according to either claim 25 or claim 26 wherein R¹, R² and R³ are H, R⁴ is –CH₂CH₂SO₃H and y is less than 1.
- 31. A mixture of dyes according to either claim 25 or claim 26 wherein R¹ is H, R² is CH₃, R³ is H and R⁴ is -CH₂CH₂SO₃H.
- 32. (original): A mixture of dyes according to either claim 25 or claim 26 wherein R^1 and R^2 are CH_3 , R^3 is H and R^4 is $-CH_2CH_2SO_3H$.
- 33. (original): A mixture of dyes according to either claim 25 or claim 26 wherein R¹ and R² independently are H or methyl and R³ and R⁴ together with the nitrogen atom to which they are attached represent an optionally substituted 3 to 8 membered aliphatic or aromatic ring.
- 34. (currently amended): A mixture of dyes according to any one of claims 25 to 33 claim 25 or claim 26 free from fibre reactive groups.
- 35. (currently amended): A composition which comprises a major dye component which is a mixture of phthalocyanine dyes of Formula (4), as defined in any one of claims 25 to 34 claim 25 or claim 26, and water.
- 36. (original): A composition according to claim 35 which is an ink suitable for use in an ink-jet printer.
- 37. (original): A process for forming an image on a substrate comprising applying a composition according to claim 24 or claim 36 thereto by means of an ink-jet printer.
- 38. (currently amended): A material printed with a composition according to any one of claims 1 to 24, 35 or 36 or a dye according to any one of claims 25 to 34 claim 1.

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- 39. (currently amended): A material according to claim 38 which is a photograph printed using a process according to claim 37 an ink-jet printer.
- 40. (original): An ink-jet printer cartridge comprising a chamber and an ink wherein the ink is in the chamber and the ink is according to claim 24 or claim 36.

14